

In the Claims

1.-14. (Cancelled)

15. (New) A device for controlling propulsive gas mixing at an outlet of an aircraft jet engine, wherein propulsive jets are composed of a hot primary jet exiting from a nozzle of the jet engine and a secondary flux flowing between an external wall of the nozzle and an internal wall of the jet engine comprising:

a divergent trailing edge on an internal wall of the nozzle that diverges from a central axis extending along the jet engine and generates conditions of a minimal separation of the primary jet from the internal wall; and

a primary jet controller that enables control of passage of the primary jet from a separated state to a reattached state, and vice versa;

the controller being fixed to the wall of the exit nozzle relative to the primary jet; and

the divergent trailing edge being in a fixed position with respect to the wall of the nozzle.

16. (New) The device according to claim 15, wherein controlling the separation of the primary jet is periodic in time and creates a succession of moments in which the flow is separated and those in which the flow is reattached.

17. (New) The device according to claim 16, wherein control of the separation of the primary jet has a frequency between about 50 Hz and about 10 KHz.

18. (New) The device according to claim 15, wherein the controller comprises at least one synthetic jet generated by an intermediary of a slot located in the internal wall of the nozzle and a piezoelectric actuator housed in a cavity located in the internal wall of the nozzle.

19. (New) The device according to claim 15, wherein the controller comprises at least one synthetic jet generated by an intermediary of a slot located in the internal wall of the nozzle and a pressure generator housed in a cavity located in the internal wall of the nozzle.

20. (New) The device according to claim 15, wherein the controller comprises at least one piezoelectric actuator arranged on the internal wall of the nozzle.

21. (New) The device according to claim 15, wherein the controller comprises at least two electrodes arranged on the internal wall of the nozzle to create a corona effect electric discharge.

22. (New) The device according to claim 15, wherein the controller comprises at least one pressure generator arranged on the internal wall of the nozzle.

23. (New) The device according to claim 15, wherein the controller is arranged on all or a part of the circumference of the internal wall of the nozzle.

24. (New) The device according to claim 15, wherein the controller is arranged on all or a part of the circumference of the external wall of said nozzle.

25. (New) The device according to claim 15, wherein control of the separation of the primary jet is implemented at the divergent trailing edge corresponding to the end of the nozzle.

26. (New) The device according to claim 15, wherein control of the separation of the primary jet is implemented to generate either a symmetrical flow or an antisymmetrical flow at the outlet of the jet engine.

27. (New) The device according to claim 15, wherein the divergent trailing edge has an angle with the external wall of the nozzle between about 10 and about 30°.

28. (New) The device according to claim 15, wherein the internal wall of the nozzle is convergent upstream of said divergent trailing edge.

29. (New) A device for controlling propulsive gas mixing at an outlet of an aircraft jet engine, wherein propulsive jets are composed of a hot primary jet exiting from a nozzle of the jet engine and a secondary flux flowing between an external wall of the nozzle and an internal wall of the jet engine comprising:

an immovable divergent trailing edge on an internal wall of the nozzle that diverges from a central axis extending through the jet engine and is fixed to the internal wall of the engine and generates conditions of a minimal separation of the primary jet from the internal wall; and

a primary jet controller that enables control of passage of the primary jet from a separated state to a reattached state, and vice versa.